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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|-----------------------|------------------|
| 10/827,512 | 04/19/2004 | Hun-Jung Yi | 8836-242 (IH13145-US) | 3483 |
| 22150 7590 07/25/2008 F. CHAU & ASSOCIATES, LLC 130 WOODBURY ROAD WOODBURY, NY 11797 | | | | |
| EXAMINER | | | | |
| WATSON, JOY L | | | | |
| ART UNIT | | PAPER NUMBER | | |
| 1792 | | | | |
| MAIL DATE | | DELIVERY MODE | | |
| 07/25/2008 | | PAPER | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/827,512

Applicant(s)

YI ET AL.

Examiner

JOY WATSON

Art Unit

1792

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 May 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-226 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-26 is/are rejected.
- 7) ☒ Claim(s) 13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SE/US)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 13, 2008 has been entered.

Response to Arguments

2. Applicant's arguments, see Applicant's Remarks, filed May 13, 2008, with respect to the rejection(s) of claim(s) 8-26 under 35 USC 103 have been fully considered and are persuasive in view of amendments to the claims. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Kamikawa et al. (US Patent 6,299,696 known hereafter as '696), Dexter (US Patent 5,524,361 known hereafter as '361) and Kamikawa et al. (US PG Pub 2003/0159718 known hereafter as '718).

Claim Objections

3. Claim 13 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of previous claim 8. Applicant is

Art Unit: 1792

required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 8 states that the exhaust path comprises a plurality of holes in the separation plate which is additionally claimed in claim 13.

Claim Rejections - 35 USC § 112

4. Claim 8-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. Claims 8, 18 and 20: It is unclear as to which surface of the separation is perpendicular to the exhaust path. Further clarification is required.

b. Claim 20: It is unclear if applicant is trying to state that the separation plate stops communication between the drying chamber and the cleaning chamber when the separation plate is in the closed position since the separation plate has holes which allow fluid to pass from the drying chamber to the cleaning chamber while in the closed position. Further clarification is required.

c. Claims 9-17, 19 and 21-26 are rejected due to their dependency on Claims 8, 18 or 20.

Claim Rejections - 35 USC § 103

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 8-11, 13-22 and 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over '696 and further in view of '361.

Claim 8-9, 13-22 and 24

'696 teaches an apparatus for cleaning semiconductor substrates (col. 1 lines 4-21) in a row and the row direction is vertical to the processing surfaces of the substrates (Fig. 2 and 3) comprising: a chamber having a cleaning room (4) in which the semiconductor substrates are cleaned and a drying room (2) disposed over the cleaning room, in which the semiconductor substrates are dried (Fig. 2); a supporter disposed in the chamber that supports the semiconductor substrates (6) (col. 5 lines 10-67); a supply pipe installed in the drying room that supplies a drying fluid onto the substrate (Fig. 2 ozone gas, IPA and water vapor); a separation plate (7) which is movable to separate the cleaning room and the drying room or the place the cleaning room and the drying room in communication with one another (col. 5 lines 10-67). '696 teaches a shutter (or separation plate) (50) with an exhaust path (56) located between a semiconductor cleaning chamber (3) and drying chamber (140) (Fig. 4, col. 6 lines 45-67). '696 does not teach that the separation plate has a plurality of holes. '361 teaches that varying the location and quantity of holes results in uniform air distribution and drying of wafers (col.

5 lines 42-53, col. 6 lines 29-48, Fig. 5 items 40, 40', 40"). Without evidence of unexpected results, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the known technique of varying the location and quantity of holes in a plate in order to result in uniform air distribution and drying of a product within an apparatus as taught by '361 within the apparatus taught by '696.

Claim 10-11 and 25-26

'696 and '361 suggest the apparatus of claim 9 and '696 further teaches a cleaning solution supply pipe (DI water) disposed in the cleaning room. The cleaning room comprises an inner bath with a supporter (col. 5 lines 10-34) and an outer bath (32) surrounding the upper outer periphery of the inner bath with a drain on one side of the bottom of the outer bath (35) (col. 6 lines 1-8). The functional recitation "the drying fluid flowing into the cleaning room along the exhaust path of the separation plate (36) is exhausted to the outside through the exhaust port (29)" has not been given patentable weight because it is intended use. A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987)

Art Unit: 1792

7. Claims 9 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over '696 and '361 as applied to claim 8 above, and further in view of Kamikawa et al. (US Patent 6,068,002 known hereafter as '002).

Claims 9 and 24

'696 and '361 suggest the apparatus of Claim 8 and '696 teaches supplying ozone into the drying room and teaches using heaters (25) (col. 5 lines 45-60), but does not teach using a heating the gas before entering it into the drying room. '002 teaches a second supply pipe that supplies a heated dry gas into a drying room. Without evidence of unexpected results it would have been obvious to one of ordinary skill in the art at the time to use the known technique of heating the dry gas before it enters the drying room for the predictable results of heating the fluid of the second supply pipe.

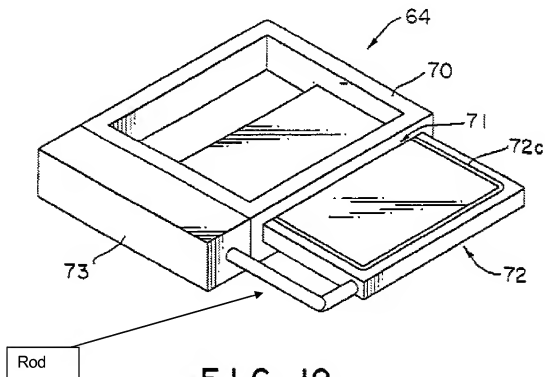
8. Claims 12 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over '696 and '361 as applied to claim 10 above, and further in view of '718.

Claims 12 and 23

'696 and '361 suggest the apparatus of claim 9, but does not teach that the separation plate comprise a connecting rod. '718 teaches the separation plate having a connecting rod connected to the separation plate and to a driving part for horizontally moving the connecting rod (p. 6 paragraph 122, Fig. 10, See Fig. below). Without evidence of unexpected results it would have been obvious to one of ordinary skill in the art at the

Art Unit: 1792

time of the invention to have a rod connecting the separation plate and driving part for horizontally moving the connecting rod with the apparatus as suggested in '696 and '361 since use of a known technique a particular known technique was recognized as part of the ordinary capabilities of one skilled in the art.

**FIG. 10*****Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOY WATSON whose telephone number is (571)270-1267. The examiner can normally be reached on 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Cleveland can be reached on 571-272-1418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JLW

/Michael Cleveland/
Supervisory Patent Examiner, Art Unit 1792